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Varian Inc. Legal Department 3120 Hansen Way D-102 Palo Alto, CA 94304			FETZNER, TIFFANY A	
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			2859	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/624,744

Applicant(s)

MURPHY ET AL.

Examiner

Tiffany A Fetzner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, and 8-15 is/are rejected.
- 7) ☒ Claim(s) 7 and 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 07/21/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 07/21/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner. [See the initialed IDS statement attached to this office action.]

Drawings

2. The drawings are objected to because:

A) **Figure 7b** shows capacitor component 32, but description page 6 line 24 refers to **Figure 7B** shows capacitor 31. The examiner notes that **figure 7A** shows capacitor 32 as well, therefore is it possible that the capacitor of figure 7B has been misidentified. Corrected drawing sheets, or a correction to the specification are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR

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1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

A) Figure 6A shows components **21, 22, and 23** with respective numbers **1, 2, and 3** which are not mentioned in the specification in connection with the written description of **Figure 6a** [See page 6 lines 7-25].

B) Figure 6B shows components **45, 47 Cs, 48 Cm, 49, and 50** which are not mentioned in the specification in connection with the written description of **Figure 6B** [See page 6 lines 7-25].

C) Figure 7A shows components **111, 131, and components 21, 22, and 23** with respective numbers **1, 2, and 3** which are not mentioned in the specification in connection with the written description of **Figure 7a** [See page 6 lines 19-27].

D) Figure 7B shows components **45, Cs, 48 Cm, 49, and 50** which are not mentioned in the specification in connection with the written description of **Figure 7B** [See page 6 lines 19-27].

E) Figure 8A shows components **11, 31, 33 and components 21, 22, and 23** with respective numbers **1, 2, and 3** which are not mentioned in the specification in connection with the written description of **Figure 8a** [See page 6 lines 24-34].

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F) Figure 8B shows components **11, 13, 31, 33, 37, 45, 46, Ct, 47 Cs, 48 Cm, 49,** and **50** which are not mentioned in the specification in connection with the written description of **Figure 8B** [See page 6 lines 24-34].

G) Figure 9A shows components **11, 31, 33** and components **21, 22,** and **23** with respective numbers **1, 2,** and **3** which are not mentioned in the specification in connection with the written description of **Figure 9a** [See page 6 line 33 through page 7 line 2].

H) Figure 9B shows components **11, 13, 33, 37, 46, Ct, 47 Cs, 48 Cm, 49,** and **50** which are not mentioned in the specification in connection with the written description of **Figure 9B** [See page 7 lines 1-2]. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

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- A)** On page 4 line 26 insert the word "machine" in front of the word "screws" so that there is proper antecedent basis for the teaching of page 5 line 11. The first time a component is mentioned in the specification, all the adjectives used to refer to this component later in the description, need to be mentioned, to prevent an antecedent basis problem.
- B)** On page 5 line 3 **delete** "6 through 9" and **insert** "6A through 9B" as applicant does not have a figure 6 or a figure 9.
- C)** On page 5 line 15 after "conducting tube 37," **insert** "as shown in fig. 4" to ensure that applicant is referring back to the figure which shows the components being described.
- D)** On page 5 line 24 **insert** "NMR" before "probe coil 45".
- E)** On page 5 line 29 after the first occurrence of "capacitor" **insert** "Cs".
- F)** On page 5 line 29 after the second occurrence of "capacitor" **insert** "Ct".
- G)** On page 5 line 33 after the first occurrence of "capacitor" **insert** "Cm".
- H)** On page 6 line 7 **delete** "6 and 7" and **insert** "6A-B and 7A-B" as applicant does not have a figure 6 or a figure 7.
- I)** On page 6 line 8 **delete** "8 and 9" and **insert** "8A-B and 9A-B" as applicant does not have a figure 8 or a figure 9.
- J)** On page 6 line 22 after Fig. 6 **insert either** "A" or "B" as it is unclear which figure is being referred to.
- K)** On page 6 line 24 **delete** "31" and **insert** "32" as applicant does not show a capacitor 31 in figure 7B, but does show a capacitor 32.

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L) On page 6 line 30 after "set screw 17" **insert** "(figures 1A, 4)" Appropriate correction is required.

Claim Objections

5. **Claim 16** is objected to because of the following informalities: In claim 16 line 2, **delete** "inserted" and **insert** the word "inserting", because the verb tense is grammatically incorrect. Appropriate correction is required.

6. **Claim 7** is objected to because of the following informalities:

A) In **Claim 7** line 2, before "spring clips" **insert** "a number of" to establish proper antecedent basis for the "number of said spring clips" which follows later in the same line.

B) In **Claim 7** line 2, in order to eliminate the intended use, which does not receive patentable weight in an apparatus claim **delete** the word "for" in front of the word "mounting", **or insert either** "which mount" **or** "that mount" in place of the words "for mounting".

C) In **Claim 7** line 2, after "wherein" **insert** "the to maintain proper antecedent basis for **the** "number of said spring clips" which follows later in the same line.

D) In **Claim 7** lines 2-3, **delete** "exceeds equal to " and **insert** "exceeds, or is equal to,".

E) In **Claim 7** line 3, in order to eliminate the intended use, which does not receive patentable weight in an apparatus claim **delete** the word "for" in front of the word "providing", **or insert either** "which provide" **or** "that provide" in place of the words "for providing".

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F) In **Claim 7** line 4, **delete** "frequencies" and **insert** "frequency", to correct a grammatical error. The examiner suggests that based on these changes that **claim 7** should be amended to claim "said electrical wiring comprises a number of spring clips [fɔr] mounting said electrical jumpers, wherein the number of said spring clips exceeds, or is equal to, a number of said electrical jumpers [fɔr] which provide respectively single or double frequency[ies] operation of said probe". Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. **Claims 1-5**, and **8-9** are rejected under **35 U.S.C. 102(b)** as being anticipated by **Munsell et al.**, US patent 5,982,179 issued November 9th 1999, filed June 4th 1997.

9. With respect to **Claim 1**, **Munsell et al.**, teaches "An adjustable 1/4 wave assembly for NMR spectrometry" [See abstract, col. 1 lines 45-50 where the NMR 1/4 wave switch assembly is adjustable for both single tuned frequency operations and double tuned frequency operations.] "comprising: a probe [See figures 11, 15, 16, 17, 19, 20, 21, and 22] "having a probe coil" (i.e. NMR probe coil 94) "and probe capacitors" (i.e. components 96, C₀) "for detecting NMR signals;" [See col. 1 lines 29-31, col. 1 lines 45-51] "a detachable wand" (i.e. the

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examiner is interpreting the "detachable $\frac{1}{4}$ wave stick" of **Munsell et al.**, col. 2 lines 50-56, as equivalent to the "detachable wand" component of this claim.

10. Additionally, **Munsell et al.**, teaches that the "detachable $\frac{1}{4}$ wave stick/wand" [See component 144 in figure 21] comprises "a central conducting rod supporting a sliding collar made of electrically conductive material;" [See col. 2 lines 50-56; and col. 7 line 30 through col. 8 line 43 where shoring member or disc 154 functions as a slip-fit / sliding collar which is shown to support center conductor 116, of figure 21, and is taught to be made of OFHC copper which is a conducting material. **Munsell et al.**, also teaches "a tube fixed to said probe for receiving therein said detachable wand;" (i.e. $\frac{1}{4}$ wave tube 90 col. 6 line 12 through col. 8 line 58) "contacts disposed on a periphery of said sliding collar for providing electrical contact with said tube when said detachable wand being inserted into said tube, wherein said wand and said tube form a $\frac{1}{4}$ wave shorted stub" [See col. 2 lines 50-56; col. 8 lines 5-58.]

11. With respect to **Claim 2**, **Munsell et al.**, teaches a "fastening device" (i.e. conical mating surface 146) "for fixing a position of said sliding collar on said central conducting rod." [See col. 8 lines 5-58.] The same reasons for rejection, that apply to **claim 1** also apply to **claim 2** and need not be reiterated.

12. With respect to **Claim 3**, **Munsell et al.**, teaches that "said probe further comprising an electrical socket that is coupled to said probe coil and said probe capacitors; and said wand further comprising an electrical plug mating to said electrical socket with two or more electrical contacts and electrical wiring for providing connection between said probe and said wand." [See col. 3 line 56

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through col. 7 line 29, Figures 1-19; insert plug component 28, the examiner notes that all of the numerous electrical connections comprise the electrical socket into which the detachable capacitor stick 100 is inserted.] The same reasons for rejection, that apply to **claims 1-2** also apply to **claim 3** and need not be reiterated.

13. With respect to **Claim 4, Munsell et al.**, teaches that "said wand further comprising wand capacitors" [See col. 6 line 11 through col. 7 line 29]. The same reasons for rejection, that apply to **claims 1-3** also apply to **claim 4** and need not be reiterated.

14. With respect to **Claim 5, Munsell et al.**, teaches that "said electrical wiring comprises spring clips for mounting said wand capacitors, number of said spring clips exceeds or equal to number of said wand capacitors for providing respectively single or double frequencies operation of said probe." [See col. 4 line 1 through col. 7 line 28; external capacitor 102, spring clip 30, the abstract, and figures 1-19] The same reasons for rejection, that apply to **claims 1-4** also apply to **claim 5** and need not be reiterated.

15. With respect to **Claim 8, Munsell et al.**, teaches that "one of said wand capacitors is connected in parallel with said probe coil to reduce the resonant frequency of said probe." [See col. 6 lines 50-53; col. 7 line 64 through col. 8 line 5]. The same reasons for rejection, that apply to **claims 1-5** also apply to **claim 8** and need not be reiterated.

16. With respect to **Claim 9, Munsell et al.**, teaches that " said electrical wiring is connected to one or more wand capacitors for switching the frequencies

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of operation of said probe and forming an electrical short circuit across said 1/4 wave shorted stub." [See col. 3 line 55 through col. 8 line 58 as this is the main purpose of the **Munsell et al.**, invention; col. 1 lines 4-9; col. 1 lines 45-50; col. 2 lines 44-57; and the abstract]. The same reasons for rejection, that apply to **claims 1-5**, and **8** also apply to **claim 9** and need not be reiterated.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a

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later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. **Claims 10-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Munsell et al.**, US patent 5,982,179 issued November 9th 1999, filed June 4th 1997.

21. With respect to **Claim 10**, **Munsell et al.**, teaches "An adjustable 1/4 wave assembly for NMR spectrometry comprising: a probe having a probe coil and probe capacitors for detecting NMR signals, and a detachable wand having: a sliding collar made of electrically conductive material; a central conducting rod supporting said sliding collar; means for fixing a position of said sliding collar on said central conducting rod; a tube surrounding said rod and said conducting collar, contacts disposed on periphery of said conducting collar for providing electrical contact with said tube, wherein said conducting rod, sliding collar and said tube form a 1/4 wave shorted stub" for the same reasons as those already provided in the rejection of **claim 1**, which need not be reiterated.

22. **Munsell et al.**, lacks directly teaching that the "contacts" (i.e. components 18 and 122) are in the form of "fingers" or that they are specifically "finger contacts". However, It would have been obvious to one of ordinary skill in the art at the time that the invention was made that the resilient thread-like contacts could be modified to be finger-like because both thread and finger type contacts are interlocking connections, and both perform the function taught in the **Munsell et al.**, reference of providing one or more fixed mechanical mounting point(s) for

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the center conductor of the assembly. [See col. 7 lines 50-61] Therefore, the ability to modify the shape of the contacts, without changing the functionality of the device taught by **Munsell et al.**, would have been readily obvious to one of ordinary skill in the art at the time that the invention was made. The same reasons for rejection, that apply to **claim 1** also apply to **claim 10** and need not be reiterated.

23. With respect to **Claim 11, Munsell et al.**, teaches that "said probe further comprising an electrical socket and said wand further comprising a mating electrical plug of two or more electrical contacts to form connections between said probe and wand when said wand is attached to said probe". [See the same reasons of rejection as those already provided in the rejection of **claims 1, 3**, which need not be reiterated.] The same reasons for rejection, and obviousness that apply to **claims 1, 2, 3**, and **10** also apply to **claim 11** and need not be reiterated.

24. With respect to **Claim 12, Munsell et al.**, teaches that "said electrical socket is coupled to the said probe coil and one or more probe capacitors, and said electrical plug is coupled to an electrical wiring" [See figures 1-20; col. 3 line 56 through col. 8 line 58; plug 28, and the housing/electrical connections for plug 28 which automatically comprise an electrical socket for the plug component.] The same reasons for rejection, and obviousness that apply to **claims 1, 2, 3, 10** and **11** also apply to **claim 12** and need not be reiterated.

25. With respect to **Claim 13, Munsell et al.**, shows in Figures 11, 16, and 20 that "said wand further comprising up to three wand capacitors." [See figures 11,

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16, and 20]. The same reasons for rejection, and obviousness that apply to **claims 1, 2, 3 10, 11, and 12** also apply to **claim 13** and need not be reiterated.

26. With respect to **Claim 14, Munsell et al.**, teaches and suggests that "said electrical wiring includes spring clips for selectively mounting said wand capacitors". [See col. 6 line 40 through col. 7 line 5] The same reasons for rejection, and obviousness that apply to **claims 1, 2, 3 10, 11, 12, and 13** also apply to **claim 14** and need not be reiterated.

27. With respect to **Claim 15 and corresponding claim 6, Munsell et al.**, lacks directly teaching that "said wand further comprises electrical jumpers". However, it would have been obvious to one of ordinary skill in the art at the time that the invention was made, to modify the teaching of **Munsell et al.**, to include electrical jumpers on the detachable stick/wand, as the shorting member which connects the distal end 150 of the extension tube 144 to the center conductor 116, because the feature which is taught by **Munsell et al.**, that is required is the ability to short the NMR $\frac{1}{4}$ wave probe through the extension tube 144 (i.e. the detachable wand) with the $\frac{1}{4}$ center conductor 116; and electrical jumpers are conventionally a means for shorting electrical components. Therefore the modifying of the detachable wand component to include electrical jumpers as the shorting means would have been readily obvious to one of ordinary skill in the art at the time that the invention was made. The same reasons for rejection, and obviousness that apply to **claims 1, 2, 3 10, 11, 12, 13 and 14** also apply to **claims 6, 15** and need not be reiterated.

Allowable Subject Matter

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28. **Claims 7 and 16-18** are objected to as being dependent upon a rejected base claim, but would be allowable **if rewritten in independent form** including all of the limitations of the base claim and any intervening claims, **and amended to overcome the objections to claims 7 and 16 noted earlier in this office action** because the prior art of record lacks teaching or suggesting (**claim 7**) that "said electrical wiring comprises a number of spring clips mounting said electrical jumpers, wherein **the** number of said spring clips exceeds, or is equal to, a number of said electrical jumpers which provide respectively single or double frequency operation of said probe"; or **claim 16** that "said electrical wiring includes spring clips for selectively inserting one or more electrical jumpers."

29. With respect to **Claims 17 and 18**, these claims are considered to be allowable by the examiner **only because they depend from objected to claim 16**. Without the dependency on **claim 16** these claims would have been rejected, by the examiner, for the same reasons given in the rejections of corresponding **claims 8 and 9** above."

30. The **prior art made of record** and not relied upon is considered pertinent to applicant's disclosure.

A) Fujito US patent 4,996,482 issued February 26th 1991 which shows a structure similar to **Munsell et al.**, applied above.

B) Finnigan US patent 5,768,089 issued June 16th 1998 which shows a structure similar to **Munsell et al.**, applied above.

C) Kikinis US patent 5,390,673 issued February 21st 1995 which shows a hand-held NMR RF burst probe with a removable receptacle.

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D) Lee et al., US patent 6,714,809 B2 issued March 30th 2004, filed November 20th 2001, with an effective US priority 102 (e) date of November 20th 2000, which shows a connector and Guidewire connectable thereto which is detachable. [See entire reference].

E) Lee et al., US patent application publication 2002/0161421 A1 published October 31st 2002, which is the corresponding publication of the **Lee et al.**, US patent 6,714,809 B2 noted above, filed November 20th 2001, with an effective US priority 102 (e) date of November 20th 2000, which also shows a connector and Guidewire connectable thereto which is detachable. [See entire reference].

Conclusion

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiffany Fetzner whose telephone number is: (571) 272-2241. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm., and on alternate Friday's from 7:00am to 3:30pm.

32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached at (571) 272-2245. The **only official fax phone number** for the organization where this application or proceeding is assigned is **(703) 872-9306**.



TAF
June 16, 2004



Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800